WHAT IS CLAIMED IS:

1. A method of treating or identifying diseased tissues in a subject, comprising:

(A) administering to said subject a bi-specific antibody or antibody fragment having at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate comprising at least two HSG haptens;

(B) optionally, administering to said subject a clearing composition, and allowing said composition to clear non-localized antibodies or antibody fragments from circulation;

(C) administering to said subject a targetable conjugate which comprises a carrier portion which comprises or bears at least two HSG haptens and may comprise a diagnostic or therapeutic cation, and/or one or more chelated or chemically bound therapeutic or diagnostic agents, or enzymes; and

(D) when said targetable conjugate comprises an enzyme, further administering to said subject

1) a prodrug, when said enzyme is capable of converting said prodrug to a drug at the target site; or

2) a drug which is capable of being detoxified in said subject to form an intermediate of lower toxicity, when said enzyme is capable of reconverting said detoxified intermediate to a toxic form, and, therefore, of increasing the toxicity of said drug at the target site, or

3) a prodrug which is activated in said subject through natural processes and is subject to detoxification by conversion to an intermediate of lower toxicity, when said enzyme is capable of reconverting said detoxified intermediate to a toxic form, and, therefore, of increasing the toxicity of said drug at the target site.

2. The method of claim 1, wherein said diagnostic agent emits 25-600 keV gamma particles and/or positrons.

3. The method of claim 1, wherein said therapeutic agent is a drug, prodrug or toxin.

4. The method of claim 3, wherein said prodrug is selected from the group consisting of epirubicin glucuronide, CPT-11, etoposide glucuronide, daunomicin glucuronide and doxorubicin glucuronide.

5. The method of claim 3, wherein said toxin is selected from the group consisting of ricin, abrin, ribonuclease, DNase I, *Staphylococcal* enterotoxin-A, pokeweed antiviral protein, gelonin, diphtherin toxin, *Pseudomonas* exotoxin, and *Pseudomonas* endotoxin.

6. The method of claim 1 further comprising a therapeutic nuclide.

7. The method of claim 6, wherein said therapeutic nuclide is selected from the group consisting of ^{32}P, ^{33}P, ^{47}Sc, ^{64}Cu, ^{67}Cu, ^{67}Ga, ^{90}Y, ^{111}Ag, ^{111}In, ^{125}I, ^{131}I, ^{142}Pr, ^{153}Sm, ^{161}Tb, ^{166}Dy, ^{166}Ho, ^{177}Lu, ^{186}Re, ^{188}Re, ^{189}Re, ^{212}Pb, ^{212}Bi, ^{213}Bi, ^{211}At, ^{223}Ra and ^{225}Ac.

8. The method of claim 2, wherein said diagnostic agent is selected from the group consisting of ^{18}F, ^{52}Fe,^{62}Cu, ^{64}Cu, ^{67}Cu, ^{67}Ga, ^{68}Ga, ^{86}Y, ^{89}Zr, ^{94m}Tc, ^{94}Tc, ^{99m}Tc, ^{111}In, ^{123}I, ^{124}I, ^{125}I, and ^{131}I.

9. The method of claim 1, wherein said targetable conjugate comprises one or more radioactive isotopes useful for killing diseased tissue.

10. The method of claim 1, wherein said targetable conjugate comprises ^{10}B atoms, and said method further comprises the step of irradiating said boron atoms localized at said diseased tissue, thereby effecting BNCT of said diseased tissue.

11. The method of claim 1, wherein said targetable conjugate comprises one or more toxins.

12. The method of claim 11, wherein said toxin is selected from the group consisting of selected from the group consisting of ricin, abrin, ribonuclease, DNase I,

Staphylococcal enterotoxin-A, pokeweed antiviral protein, gelonin, diphtherin toxin, *Pseudomonas* exotoxin, and *Pseudomonas* endotoxin.

13. The method of claim 1, wherein said targetable conjugate comprises one or more drugs.

14. The method of claim 1, wherein said targetable conjugate comprises one or more prodrugs.

15. The method of claim 14, wherein said prodrug is selected from the group consisting of epirubicin glucuronide, CPT-11, etoposide glucuronide, daunomicin glucuronide and doxorubicin glucuronide.

16. The method of claim 1, wherein said targetable conjugate comprises one or more diagnostic agents useful for detecting diseased tissue.

17. The method of claim 16, wherein the diagnostic agent is selected from the group consisting of ^{118}F, ^{52}Fe,^{62}Cu, ^{64}Cu, ^{67}Cu, ^{67}Ga, ^{68}Ga, ^{86}Y, ^{89}Zr, ^{94m}Tc, ^{94}Tc, ^{99m}Tc, ^{111}In, ^{123}I, ^{124}I, ^{125}I, and ^{131}I.

18. The method of claim 16, wherein said radioactive isotope is used to perform positron-emission tomography (PET).

19. The method of claim 1, wherein said targetable conjugate comprises one or more image enhancing agents for use in magnetic resonance imaging (MRI).

20. The method of claim 19, wherein said enhancing agent is selected from the group consisting of Mn, Fe and Gd.

21. The method of claim 1, wherein the targetable conjugate comprises one or more agents for photodynamic therapy.

22. The method of claim 21, wherein said agent for photodynamic therapy is a photosensitizer.

23. The method of claim 22, wherein said photosensitizer is selected from the group consisting of benzoporphyrin monoacid ring A (BPD-MA), tin etiopurpurin (SnET2), sulfonated aluminum phthalocyanine (AlSPc) and lutetium texaphyrin (Lutex).

24. The method of claim 1, wherein said at least one arm that specifically binds a targeted tissue is a monoclonal antibody or a fragment of a monoclonal antibody.

25. The method of claim 1, wherein said at least one other arm that specifically binds a targetable conjugate is a monoclonal antibody or a fragment of a monoclonal antibody.

26. The method of claim 1, wherein said at least one arm that specifically binds a targeted tissue is a human, chimeric or humanized antibody or a fragment of a human, chimeric or humanized antibody.

27. The method of claim 1, wherein said at least one other arm that specifically binds a targetable conjugate is a human, chimeric or humanized antibody or a fragment of a human, chimeric or humanized antibody.

28. The method of claim 1, wherein said bi-specific antibody or antibody fragment further comprises a therapeutic nuclide.

29. The method of claim 28, wherein said therapeutic radionuclide is selected from the group consisting of ^{32}P, ^{33}P, ^{47}Sc, ^{64}Cu, ^{67}Cu, ^{67}Ga, ^{90}Y, ^{111}Ag, ^{111}In, ^{125}I, ^{131}I, ^{142}Pr, ^{153}Sm, ^{161}Tb, ^{166}Dy, ^{166}Ho, ^{177}Lu, ^{186}Re, ^{188}Re, ^{189}Re, ^{212}Pb, ^{212}Bi, ^{213}Bi, ^{211}At, ^{223}Ra and ^{225}Ac.

30. The method of claim 1, wherein said targetable conjugate comprises doxorubicin, SN-38, etoposide, methotrexate, 6-mercaptopurine or etoposide phosphate.

31. The method of claim 1, wherein said targeted tissue is a tumor.

32. The method of claim 32, wherein said tumor produces or is associated with colon-specific antigen-p (CSAp)

33. The method of claim 32, wherein the bispecific antibody comprises the Fv of MAb Mu9 and the Fv of MAb 679.

34. The method of claim 33, wherein Mu9 and/or 679 are chimerized or humanized.

35. The of claim 33, wherein Mu9 and/or 679 are human Mu9 and 679.

36. The method of claim 33, wherein the bispecific antibody comprises one or more of the CDRs of Mu9.

37. The method of claim 33, wherein the bispecific antibody comprises one or more of the CDRs of 679.

38. The method of claim 31, wherein the bispecific antibody is a fusion protein.

39. The method of claim 31, wherein the tumor produces carcinoembryonic antigen (CEA).

40. The method of claim 39, wherein the bispecific antibody comprises the Fv of MAb MN14 and the Fv of MAb 679.

41. The method of claim 40, wherein MN14, and/or 679 are chimerized or humanized.

42. The method of claim 40, wherien MN14, and/or 679 are human MN14 and 679.

43. The method of claim 40, wherein the bispecific antibody comprises one or more of the CDRs of MN14.

44. The method of claim 40, wherein the bispecific antibody comprises one or more of the CDRs of 679.

45. The method of claim 40, wherein the bispecific antibody is a fusion protein.

46. The method of claim 45, wherein the fusion protein is trivalent, and incorporates the Fv of an antibody reactive with CSAp.

47. The method of claim 39, wherein the bispecific antibody incorporates a Class III anti-CEA antibody and the Fv of 679.

48. A method for detecting or treating target cells, tissues or pathogens in a mammal, comprising:

administering an effective amount of a bispecific antibody or antibody fragment comprising at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate;

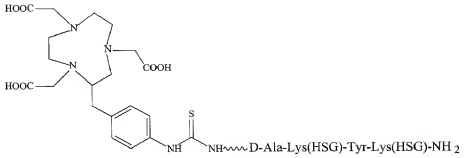
wherein said at least one arm is capable of binding to a complementary binding moiety on the target cells, tissues or pathogen or on a molecule produced by or associated therewith; and

administering a targetable conjugate selected from the group consisting of

(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

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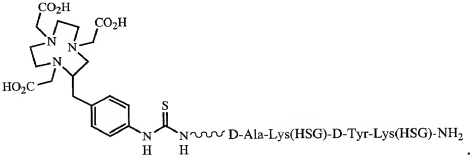
(e) 

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49. The method of claim 48, wherein said pathogen is a fungi, virus, parasite or bacterium.

50. The method of claim 49, wherein said virus is selected from the group consisting of human immunodeficiency virus (HIV), herpes virus, cytomegalovirus, rabies virus, influenza virus, hepatitis B virus, Sendai virus, feline leukemia virus, Reo virus, polio virus, human serum parvo-like virus, simian virus 40, respiratory syncytial virus, mouse mammary tumor virus, Varicella-Zoster virus, Dengue virus, rubella virus, measles virus, adenovirus, human T-cell leukemia viruses, Epstein-Barr virus, murine leukemia virus, mumps virus, vesicular stomatitis virus, Sindbis virus, lymphocytic choriomeningitis virus, wart virus and blue tongue virus.

51. The method of claim 49, wherein said bacterium is selected from the group consisting of Streptococcus agalactiae, Legionella pneumophilia, Streptococcus pyogenes, Escherichia coli, Neisseria gonorrhoeae, Neisseria meningitidis, Pneumococcus, Hemophilis influenzae B, Treponema pallidum, Lyme disease spirochetes, Pseudomonas

aeruginosa, Mycobacterium leprae, Brucella abortus, Mycobacterium tuberculosis and Tetanus toxin.

52. A method of treating or identifying diseased tissues in a subject, comprising:

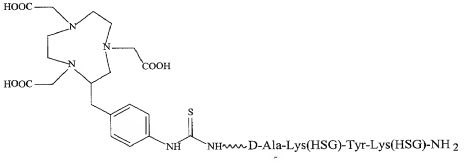
administering to said subject a bi-specific antibody or antibody fragment having at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate;

optionally, administering to said subject a clearing composition, and allowing said composition to clear non-localized antibodies or antibody fragments from circulation; and administering to said subject a targetable conjugate selected from the group consisting of:

(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

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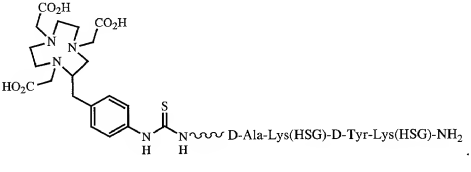
(e) 

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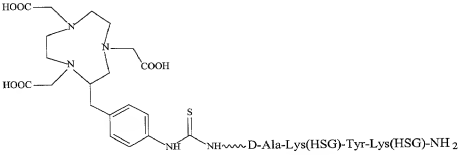
53. A kit useful for treating or identifying diseased tissues in a subject comprising:

(A) a bi-specific antibody or antibody fragment having at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate, wherein said conjugate is selected from the group consisting of

(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

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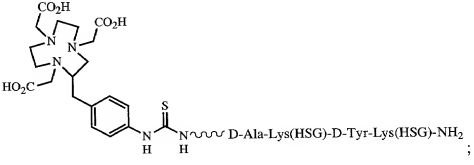
(e) 

;

(B) a targetable conjugate which comprises a carrier portion which comprises or bears at least one epitope recognizable by said at least one other arm of said bi-specific antibody or antibody fragment, and one or more conjugated therapeutic or diagnostic agents, or enzymes; and

(C) optionally, a clearing composition useful for clearing non-localized antibodies and antibody fragments; and

(D) optionally, when said first targetable conjugate comprises an enzyme,

1) a prodrug, when said enzyme is capable of converting said prodrug to a drug at the target site; or

2) a drug which is capable of being detoxified in said subject

to form an intermediate of lower toxicity, when said enzyme is capable of reconverting said detoxified intermediate to a toxic form, and, therefore, of increasing the toxicity of said drug at the target site, or

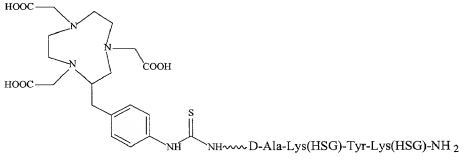
3) a prodrug which is activated in said subject through natural processes and is subject to detoxification by conversion to an intermediate of lower toxicity, when said enzyme is capable of reconverting said detoxified intermediate to a toxic form, and, therefore, of increasing the toxicity of said drug at the target site.

54. A targetable conjugate selected from the group consisting of:

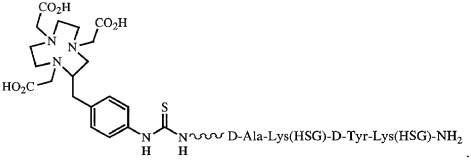
(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

; and

(e) 

55. A method of screening for a targetable conjugate comprising:

contacting said targetable construct with a bi-specific antibody or antibody fragment having at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds said targetable conjugate to give a mixture;

wherein said at least one arm is capable of binding to a complementary binding moiety on the target cells, tissues or pathogen or on a molecule produced by or associated therewith; and

optionally incubating said mixture; and

analyzing said mixture.

56. The method of claim 55, wherein said analysis comprises an analytical method selected from the group consisting of FABMS, high-field NMR or size-exclusion HPLC.

57. A method for imaging normal tissue in a mammal, comprising:

administering an effective amount of a bispecific antibody or antibody fragment comprising at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate;

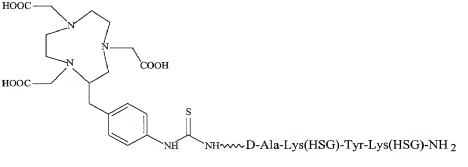
wherein said at least one arm is capable of binding to a complementary binding moiety on the target cells, tissues or pathogen or on a molecule produced by or associated therewith; and

administering a targetable conjugate selected from the group consisting of

(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

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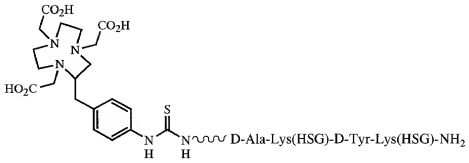
(e) 

58. The method of claim 57, wherein said normal tissue is tissue from the ovary, thymus, parathyroid or spleen.

59. The method of claim 57, wherein said virus is selected from the group consisting of human immunodeficiency virus (HIV), herpes virus, cytomegalovirus, rabies virus, influenza virus, hepatitis B virus, Sendai virus, feline leukemia virus, Reo virus, polio virus, human serum parvo-like virus, simian virus 40, respiratory syncytial virus, mouse mammary tumor virus, Varicella-Zoster virus, Dengue virus, rubella virus, measles virus, adenovirus, human T-cell leukemia viruses, Epstein-Barr virus, murine leukemia virus, mumps virus, vesicular stomatitis virus, Sindbis virus, lymphocytic choriomeningitis virus, wart virus and blue tongue virus.

60. The method of claim 57, wherein said bacterium is selected from the group consisting of Streptococcus agalactiae, Legionella pneumophilia, Streptococcus pyogenes, Escherichia coli, Neisseria gonorrhoeae, Neisseria meningitidis, Pneumococcus, Hemophilis influenzae B, Treponema pallidum, Lyme disease spirochetes, Pseudomonas aeruginosa, Mycobacterium leprae, Brucella abortus, Mycobacterium tuberculosis and Tetanus toxin.

61. A method of intraoperatively identifying diseased tissues, in a subject, comprising:

administering an effective amount of a bispecific antibody or antibody fragment comprising at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate;

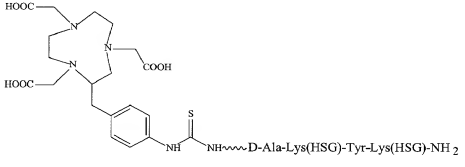
wherein said at least one arm is capable of binding to a complementary binding moiety on the target cells, tissues or pathogen or on a molecule produced by or associated therewith; and

administering a targetable conjugate selected from the group consisting of

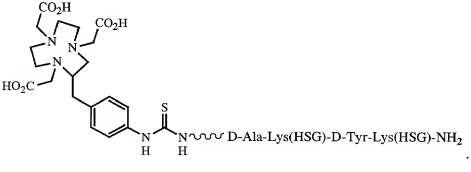
(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

; and

(e) 

62. A method for the endoscopic identification of diseased tissues, in a subject, comprising:

administering an effective amount of a bispecific antibody or antibody fragment comprising at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate;

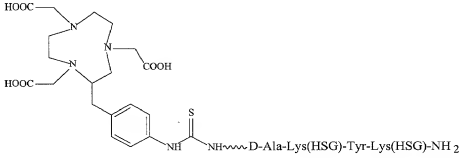
wherein said at least one arm is capable of binding to a complementary binding moiety on the target cells, tissues or pathogen or on a molecule produced by or associated therewith; and

administering a targetable conjugate selected from the group consisting of

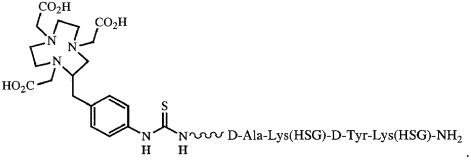
(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

; and

(e) 

63. A method for the intravascular identification of diseased tissues, in a subject, comprising:

administering an effective amount of a bispecific antibody or antibody fragment comprising at least one arm that specifically binds a targeted tissue and at least one other arm that specifically binds a targetable conjugate;

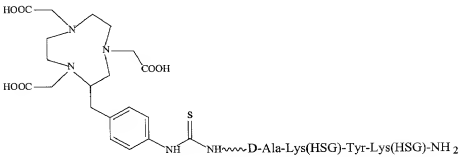
wherein said at least one arm is capable of binding to a complementary binding moiety on the target cells, tissues or pathogen or on a molecule produced by or associated therewith; and

administering a targetable conjugate selected from the group consisting of

(a) DOTA-Phe-Lys(HSG)-D-Tyr-Lys(HSG)-NH_2;

(b) DOTA-Phe-Lys(HSG)-Tyr-Lys(HSG)-NH_2;

(c) Ac-Lys(HSG)D-Tyr-Lys(HSG)-Lys(Tscg-Cys)-NH_2;

(d) 

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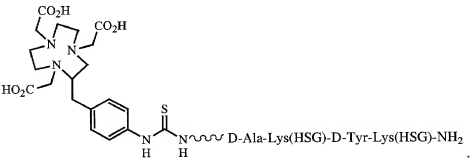
(e) 

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64. The method of any one of claims 48, 52, 53, 54, 55, 57, 61, 62 or 63 wherein said targetable conjugate further comprises a diagnostic agent selected from the group consisting of ^{18}F, ^{52}Fe, ^{62}Cu, ^{64}Cu, ^{67}Cu, ^{67}Ga, ^{68}Ga, ^{86}Y, ^{89}Zr, ^{94m}Tc, ^{94}Tc, ^{99m}Tc, ^{111}In, ^{123}I, ^{124}I, ^{125}I, ^{131}I, $^{154\text{-}158}Gd$ and ^{175}Lu.

65. The method of claim 64, wherein said targetable conjugate further comprises a therapeutic nuclide selected from the group consisting of ^{32}P, ^{33}P, ^{47}Sc, ^{64}Cu, ^{67}Cu, ^{67}Ga, ^{90}Y, ^{111}Ag, ^{111}In, ^{125}I, ^{131}I, ^{142}Pr, ^{153}Sm, ^{161}Tb, ^{166}Dy, ^{166}Ho, ^{177}Lu, ^{186}Re, ^{188}Re, ^{189}Re, ^{212}Pb, ^{212}Bi, ^{213}Bi, ^{211}At, ^{223}Ra and ^{225}Ac.